

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

In re application of Renee M. Kovales, et al.

Serial No.: 10/632,177

Filed: July 31, 2003

For: Selectable Audio and Mixed Background Sound for Voice Messaging System

Art Unit: 2614

Examiner: Hemant Shantilal Patel

DECLARATION OF FACT UNDER 37 C.F.R. §1.131

We, Renee M. Kovales, Edith H. Stern, and Barry E. Willner, hereby declare the following:

1) We are co-inventors of the invention described and claimed in U. S. Patent Application Number 10/632,177 (hereinafter, "the Subject Application"), entitled "Selectable Audio and Mixed Background Sound for Voice Messaging System ", filed on July 31, 2003.

2) We are also co-inventors of the invention described in claimed in U. S. Patent Application Number 09/782,773 (hereinafter, "the Parent Application"), now U. S. Patent 7,003,083 B2, from which the Subject Application claims priority. The Parent Application is also entitled "Selectable

Audio and Mixed Background Sound for Voice Messaging System” and was filed on February 13, 2001.

3) We conceived of the invention -- as described and claimed in Claims 1, 9, 11, 14 - 15, 17 - 18, 20 - 24, 28, 34, 37, 90, and 99 - 115 of the Subject Application (hereinafter, “the claimed invention”) -- in this country before November 10, 2000. Our prior conception to practice is evidenced by the following:

Attached hereto as Exhibit A are selected pages of an Invention Disclosure document prepared prior to November 10, 2000. These pages serve as the Invention Disclosure for the Parent Application, and by virtue of the claim of priority in the Subject Application, also describe the invention claimed in the Subject Application. In a first aspect, the claimed invention comprises enhancing a voice mail message for playback to a listener by: creating the voice mail message for the listener, by a caller using a telephone device, the voice mail message comprising a plurality of message segments; identifying, by the caller using the telephone device, at least two of the message segments which are to have background sounds associated therewith; selecting, for each of the identified message segments by the caller using the telephone device, a sound to be associated therewith as the background sound, wherein the sounds selected as the background sound for at least two of the message segments are different sounds; and responsive to a request from the listener for playback of the voice mail message, playing back at least two of the identified message segments for which a sound was selected to be associated therewith as the background sound, while concurrently playing back the sound selected as the background sound for each of the played-backed identified message segments, and wherein the sounds selected as the

background sound for at least two of the played-back identified message segments are different sounds, such that the background sound played back for the voice mail message changes at least once during the playback. In a second aspect, the claimed invention comprises enhancing voice mail messages for playback to a listener by: creating a voice mail message for the listener, by a caller using a telephone device; identifying, by the caller using the telephone device while creating of the voice mail message, a plurality of message segments for segmenting the voice mail message; selecting, by the caller using the telephone device, an audio file to insert into the voice mail message between one or more selected pairs of successive ones of the message segments, such that the selected audio file is associated with the selected pair(s) of message segments; and inserting the selected audio file between the successive ones of the message segments in its associated pair(s) as the voice mail message is played back to the listener. (Portions of the Invention Disclosure may be redacted to remove information not necessary to establish the invention's conception or reduction to practice.)

4) The invention was diligently reduced to constructive practice in this country from prior to November 10, 2000 to the filing of the Parent Application on February 13, 2001, as evidenced by the following facts:

a) The Invention Disclosure document was mailed to a registered patent attorney on September 13, 2000 (notably, prior to November 10, 2000), with a target filing date of January 31, 2001, for the purpose of preparing and filing a utility patent application, which led to the February 13, 2001 filing of the Parent Application.

b) Initial discussions of the invention of the Parent Application with the registered

patent attorney occurred on December 8, 2000 and December 13, 2000, and continuing into early January, 2001.

c) A first draft of the Parent Application was created by the registered patent attorney on January 5, 2001 and distributed to us for review.

d) Second and third drafts of the Parent Application were also created by the registered patent attorney, and distributed to us for review, responsive to our comments on each successive draft, in January, 2001.


e) Following review of the third draft, our comments were sent to the registered patent attorney, leading to preparation and distribution of an approval draft of the Parent Application on January 31, 2001.

f) Following review of the approval draft, and our approval thereof, the final draft of the Parent Application was sent by the registered patent attorney to IBM Corporation on January 31, 2001.

g) Following receipt of this final draft of the Parent Application by IBM Corporation, we executed an Oath/Declaration therefor on February 12, 2001; February 7, 2001; and February 7, 2001, respectively, after which the Parent Application was filed by IBM Corporation on February 13, 2001.

5) We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U. S. C. §1001; and that such willful statements may

jeopardize the validity of the application or any patent issued thereon.



Renee M. Kovales

10/30/06

Date

Edith H. Stern

Date

Barry E. Wilner

Date

jeopardize the validity of this application for any patent issued hereon.

Renee M. Kovales

Date

Edith H. Stern
Edith H. Stern

10-28-2006
Date

Darryl F. Walner

Date

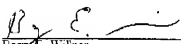
jeopardize the validity of the application or any patent issued thereon.

Renee M. Kovales

Date

Edith H. Stern

Date




Barry E. Wilner

Oct. 30, 2006

Date

Exhibit A

	Disclosure RSW 8-2000-0177
	Prepared for and for by an IBM Attorney - IBM Confidential
	Created By Renee Kovales On 08/31/2000 03:34:06 PM EDT
	Last Modified By wpls1 wpls1 On 01/07/2005 07:13:45 PM EST Archived on 12/16/2001

Required fields are marked with the asterisk (*) and must be filled in to complete the form

* Title of disclosure (in English)
Selectable Background Sound

Summary

Status	Final Decision (File)
Final deadline	
Final deadline reason	
Docket family	RSW8-2000-0128
Processing location	Raleigh - RSW
* Functional area	(RSW) Hom. Technology Group (Kopind.Lindquist)
Attorney/Patent professional	Jeanine Ray/Raleigh/IBM
Invention development team (IDT)	Marcia L. Stockton/Raleigh/IBM
Submitted date	08/31/2000 04:17:56 PM EDT
* Owning division	AIM
Incentive program	
Lab	
* Technology code	
Patent value tool (PVT) score	

Inventors with a Blue Pages entry

Inventors: Renee Kovales/Raleigh/IBM, Barry Wilner/Watson/IBM, Edie Stern/Fort Lauderdale/IBM

Inventor Name	Inventor Serial	Div/Dept	Inventor Phone	Manager Name
> Kovales, Renee		10/M0FA	N/A	Pozelsky, D.P. (Diane)
Wilner, Barry E.		7H/M21A	N/A	Huber, Judy B.
Stern, Edith H.		27/VL7A	N/A	Harrison, Colin G.

> denotes primary contact

Inventors without a Blue Pages entry

Invention Development Team Information

Attorney/Patent professional: Jeanine Ray/Raleigh/IBM
Invention development team (IDT): Marcia L. Stockton/Raleigh/IBM@IBMUS
Response due to IP&L: 10/01/2000

Main Idea

To view the Main Idea of this disclosure, open the "Main Idea" document from the view
* Critical Questions (Questions 1-9 must be answered in English)

Question 1

On what date was the invention workable? 09/01/2000 Please format the date as MM/DD/YYYY
(Workable means i.e. when you know that your design will solve the problem)

***Question 2**

Is there any planned or actual publication or disclosure of your invention to anyone outside IBM?

Yes
☐ No

If yes, Enter the name of each publication or patent and the date published below.

Publication/Patent:

Date Published or Issued:

Are you aware of any publications, products or patents that relate to this invention?

Yes
☐ No

If yes, Enter the name of each publication or patent and the date published below.

Publication/Patent:

Date Published or Issued:

***Question 3**

Has the subject matter of the invention or a product incorporating the invention been sold, used internally in manufacturing, announced for sale, or included in a proposal?

Yes
☐ No

Is a sale, use in manufacturing, product announcement, or proposal planned?

Yes
☐ No

If Yes, identify the product if known and indicate the date or planned date of sale, announcements, or proposal and to whom the sale, announcement or proposal has been or will be made.

Product:
Version/Release:
Code Name:
Date:
To Whom:

If more than one, use cut and paste and append as necessary in the field provided.

***Question 4**

Was the subject matter of your invention or a product incorporating your invention used in public, e.g., outside IBM or in the presence of non-IBMers?

Yes
☐ No

If yes, give a date. Please format the date as MM/DD/YYYY

***Question 5**

Have you ever discussed your invention with others not employed at IBM?

Yes
☐ No

If yes, identify individuals and date discussed. Fill in the text area with the following information, the names of the individuals, the employer, date discussed, under CDA, and CDA #.

***Question 6**

Was the invention, in any way, started or developed under a government contract or project?

Yes
☐ No
Not sure

If Yes, enter the contract number

***Question 7**

Was the invention made in the course of any alliance, joint development or other contract activities?

Yes
☐ No
Not Sure

If Yes, enter the following:



Title of disclosure (in English)
Selectable Background Sound

Main Idea

1. Describe your invention, stating the problem solved (if appropriate), and indicating the advantages of using the invention.
Reference disclosure RSW8-2000-0149
2. How does the invention solve the problem or achieve an advantage, (a description of "the invention", including figures inline as appropriate)?
3. If the same advantage or problem has been identified by others (inside/outside IBM), how have those others solved it and does your solution differ and why is it better?
4. If the invention is implemented in a product or prototype, include technical details, purpose, disclosure details to others and the date of that implementation.



Main Idea for Disclosure RSW 8-2000-0149

Prepared for and/or by an IBM Attorney - IBM Confidential

Archived On 09/12/2000 01:02:10 AM

Title of disclosure (in English)

Audio Content Context and Enhancement

Main Idea

1. Describe your invention, stating the problem solved (if appropriate), and indicating the advantages of using the invention.

Our invention, audio content context and enhancement, is a system and method to provide additional context during audio messages, and to provide disambiguation of topics during audio messages. Further it allows "skimming" of voice mail analogous to a reader skimming the contents of an e-mail message.

Face to face communication between people involves many parallel communication paths. We derive information from body language, from words, from intonation, from facial expressions, from the distance between our bodies. Distance communication generally involves only a few of these paths, with users trying to overcome the limitations so imposed. Today, unified messaging and network convergence exacerbates the problem by adding the difficulties of media transformation to our communication.

E-mail tries to overcome these problems by using font sizes, colors and emoticons (combination of text symbols which bear a semblance to facial expressions) to express non-text information. This information includes emphasis, emotion, irony, etc. When e-mail is transformed via an audio read out, as is done in unified messaging, this context can be lost. In email, the paragraph structure and use of bolding and italics gives clues as to the number and importance of topics. Thus, e-mail tries to overcome the limitations of distance by using visual clues for both semantic and contextual meaning. Further, visual cues such as paragraph distinctions pertaining to the end of the message on the page are perceivable as soon as the page is displayed, providing a "broadside" perception of the message.

Voicemail has a different set of problems. When equivalent information is left via voicemail, while the recipient has the benefit of the nuances available through voice, the recipient does not have the advantages of the other parallel forms of communication available in person. Unlike e-mail, with voicemail the recipient does not have the advantage of broadside perception of the message. Our invention, audio content context and enhancement, helps to overcome both these limitations.

2. How does the invention solve the problem or achieve an advantage, (a description of "the invention", including figures inline as appropriate)?

Our invention is a method and system for disambiguating topics in an audio message and for communicating context associated with a message, or part of a message, with an audio cue (eg level of certainty of translation may be represented by a meaningful background tone). The invention enables rapid navigation of voicemail messages from an ordinary, non-screen, telephone, and rapid retrieval of phone numbers from the middle of a voicemail message. This invention also enables messages to be left with "favorite music" tags.

Base level is delineation (disambiguate)

Next level is selection of context

Personal choice of audio (theme song)

Disambiguating topics:

Leaving a message - Speakers tend to be less precise in oral speech than they are in written communications. This can be inefficient when communicating via voicemail. Our invention includes a method and system for such speakers to signal, with a keyed alert sequence (KAS) during the course of

the message they are leaving, that they are now changing topic, or marking a particularly important passage. This is accomplished with a sequence of keystrokes on the telephone keypad. For example, in a message covering two topics, the speaker may pause, key in the KAS (e.g., "1"), and continue speaking. The KAS alerts the voicemail system that a new topic has been started. If a very important passage is about to be communicated, e.g., a phone number or identifier, the speaker may key in the appropriate alert (e.g., "9" or perhaps another sequence such as "19") before communicating the information.

Note. In the above description, the KAS may be recorded as part of the audio stream. In an alternate embodiment, KAS detection causes the development of metadata associated with the audio stream which allows the voicemail system to index to the KAS points.

Preparing the message for retrieval - The voicemail system analyzes each message for KAS tones. If such tones have been used, the voicemail system can associate an audio cue with each section of the message so delineated. The associated cues are mixed in with the message, i.e., "conferenced". Alternatively, the voicemail system may alternate between two such audio cues, with adjacent sections each having one of the cues. Such cues may be musical, for example tunes. They may be natural sounds such as birdsong, ocean waves. One cue may be high pitched and the next low pitched, etc. The information being conveyed is in the parsing of the topics. The voicemail system can then index the message so that the KAS tones form a series of navigable points within the message. In another embodiment, the association of audio cues with the sections of the message can be done as the message is retrieved, by either the voicemail system or the client telephone equipment (e.g., the cellphone).

Retrieving the message - When a user acts to receive the message, the voicemail system can announce or otherwise convey (e.g., with a numerical indicator on a cell phone display) the existence, and the number of KAS delineated sections. This gives the user a sense of topics to be covered. That is, along with the date and time, and number of origin of the message, the number of topics can also be announced. Alternatively, the audio cues can indicate to the user the continuity of the topic. When the cues change, the topic has changed.

Forward to the next topic - This invention enables a new voicemail feature: forward to the next topic. Each topic is delineated with a KAS and is navigable. Thus, the user can listen to the voicemail serially, or can listen to a few seconds of each topic, and skip to the next as necessary. This is particularly useful during replay of messages. When a user has listened to a message, and potentially missed noting a phone number for example, then if that phone number had been noted with a KAS, the user can navigate to it more easily.

Actions on partial voicemails - With each section delineated, this invention enables new voicemail feature which act on each section individually. Any action that can be taken on a voicemail can be taken on a partial voicemail. The user can delete or forward partial voicemails. At the end or beginning of a KAS delineated topic, the user can elect to forward only the previous section or the upcoming section to a third party. This usefully allows the pertinent portion of a message to be forwarded, while allowing the user to retain privacy on the remainder of the message. Similarly, the user can choose to delete one or more delineated sections of a voicemail, retaining only those portions which he or she desires to save.

Media Transformation: An audio cue can be used to minimize the effect of a media transformation from a non-audio source such as text. In one embodiment, each paragraph separation is taken to be a KAS as above, and an audio cue is mixed into the message. In another embodiment, an appropriate audio file is mixed with the resultant audio from the transformation, and thereby providing parallel information as to context. In this invention, we are not inserting an audio sound or cue in-line in the message (e.g., a goggle sound in place of a smiley emoticon), but we are "conferencing" an appropriate audio file for part of, or all of, the message. An appropriate cue may be determined in several ways. If the originating source has supplied keywords, this can be used as a source of cueing. If the originating source has not supplied keywords, (e.g., today's e-mail systems), the transformation may select an appropriate noun in the first few sentences to use as a source of cueing. For example, if the first sentence of a paragraph reads "The wedding date has been set", the appropriate audio cue may be church bells. If the sentence reads "The meeting was very productive" the appropriate audio cue may be papers rustling, and low conversation.

Other information: Audio cues can provide additional contextual information, especially for transformations. For example, when machine language translation is involved, audio cues can be used to indicate degree of certainty in the translation. A background hum might indicate certainty of translation, with higher pitches indicating more certainty and lower pitches indicating less. Note that this may be usefully employed in an audio to audio transform, with voice recognition in the middle, or a text to speech plus language transform. Another example would be in the use of speaker identification to identify the speaker leaving a voicemail. The background tone can indicate the degree of certainty in the identification. Similar methods can be used to highlight passages in text as to degree of certainty, when for instance the text was obtained through voice recognition. Another example, in a text to speech system an audio cue could be used to indicate the color of the text (which may indicate the degree of importance, a change in topic, and etc.), the background hum as described above could be applied in this case with the pitch indicating the level of importance, a different topic, or more simply a change in color.

Audio only messages: In another embodiment, we associate an audio emotional cue with an audio message. In this embodiment, the audio file is selected by the speaker to be mixed with the message, or inserted in the message directly without transformation. The file selected represents the context which the user wishes to convey. For example, for an angry message, the user may select quiet rolling thunder as a background. The user can select this effect before the message, during the message, or after the message is recorded with appropriate DTMF tones on the telephone keypad. This can also be done for parts of the message, as delineated with KAS tones.

User selected audio background: In this embodiment the speaker selects the audio background as part of the message being left. For example, the speaker may select from a number of offered backgrounds ("top 40") what music is to play in the background of the message. The music is mixed with the message, as the other audio cues above. In an alternate embodiment, the speaker's telephone client receives the selection request and communicates it to the voice mail system. If the speaker has unique or favorite music (for example as is used to provide ringing tone on a cell phone), and wishes to have this familiar identification (e.g., a speaker's "theme song") as part of the message being left, the telephone can communicate the music, or identify the music to the receiving voicemail system.

Note that this embodiment enables a business model of merchandizing play out of popular music, via a subscription, or a pay per use of the music. In this model, it is expected that the speaker would pay for the music, as the receiver has no opportunity to accept or decline. This is consistent with the Calling Party Pays model standard in telephony. Again, the music may be transmitted from the phone, identified from the phone, or supplied by the voicemail system from a control indicator sent by the phone. Note that Sonera has a lucrative business of downloading ringing music to phones for 50 cents a crack; this is the equivalent for leaving messages.

Figure 1: Call flow leaving a message with delineation (including finding the phone number)



LvMsg.PRZ

Figure 2: Playing a voicemail which has delineation



playvm.prz

Figure 3: Leaving a message with context



msgctxl.prz

Figure 4: Histogram for the GUI; GUI is web driven for example



AudioSegments.PRZ